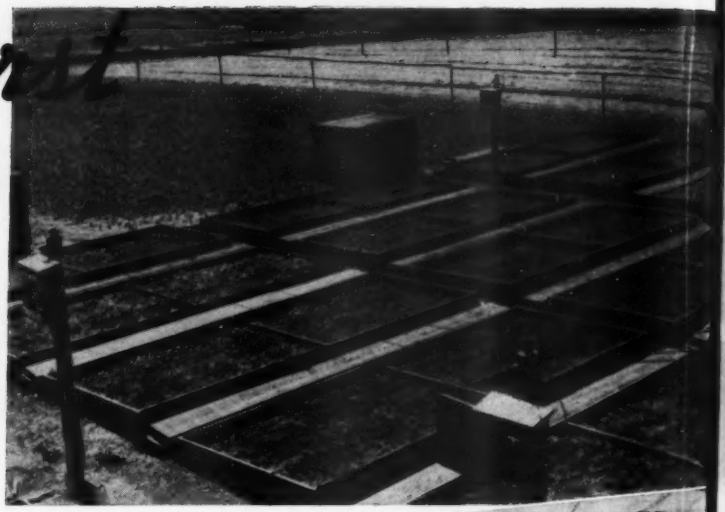
INEERING ROOM 329

ELECTRICITY on the FARM

OCTOBER
1939

THE NATIONAL MAGAZINE of RURAL ELECTRIFICATION

Be First
with FRESH Vegetables and Flowers



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Your plants grow more vigorously. You have bigger, better flowers and vegetables to sell. Your profits are increased.

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heating cable, install the the
and cover the cable with
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NEXT SPRING—Turn on
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seedlings will be weeks ahe

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and a duplex outlet. Al
plug in. Postpaid price, $

Rural Electrification Section
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Please send me your brand-new bulletin, Electricity and Plant Growth, GEA-1644F.

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96-33

GENERAL ELECTRI

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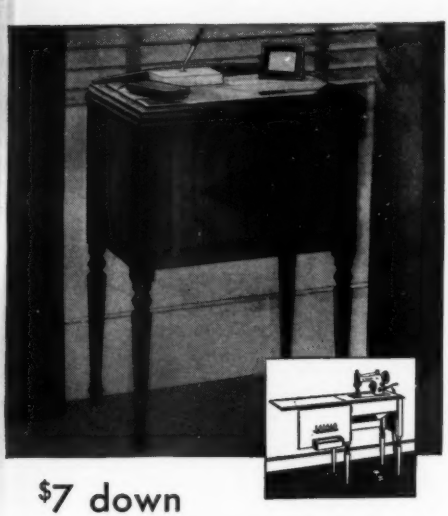
you know it's the best money can buy!

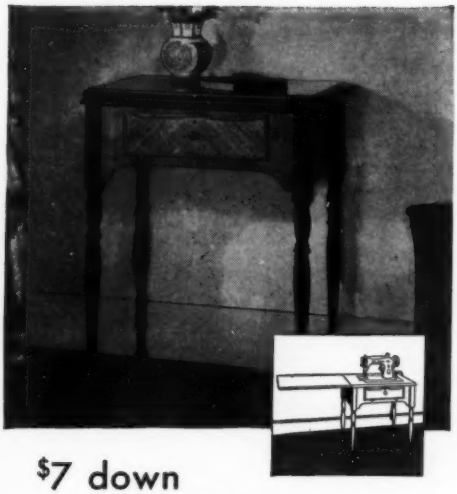


$7 down

for this compact desk electric

(Easy budget terms — liberal trade-in allowance)

Designed especially for the small home—a small but amazingly efficient electric sewing machine that does the work of the full-sized big cabinet machines. Large capacity round bobbin, quiet, trouble-free motor. Equipped with Singerlight. Comes in beautifully grained walnut. *Lifetime check-ups and adjusting free.*



$7 down

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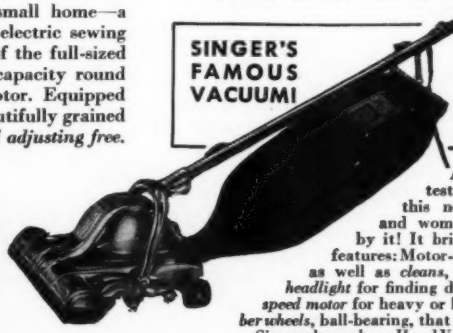
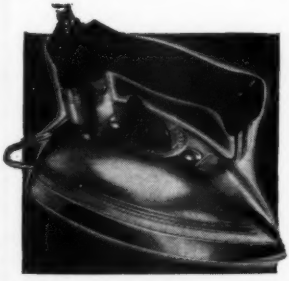
Another Singer achievement! A smooth-running, quiet sewing machine you will be proud to own. Among other features has an automatic bobbin winder; stitch regulator; Singerlight. Sturdily built of rich-grained walnut, unusually handsome for a machine of its price. *Lifetime check-ups and adjusting free.*

SINGER'S FAMOUS VACUUM!

Only $5 down *for combination of Floor and Hand Vacuums!*



After years of study and tests, Singer introduced this new vacuum cleaner—and women have been thrilled by it! It brings you these superior features: Motor-driven brush that *sweeps* as well as *cleans*, preserving your rugs; *headlight* for finding dirt in dark places; *two-speed motor* for heavy or light cleaning; *four rubber wheels*, ball-bearing, that make it easy to handle. Singer also makes a Hand Vacuum with many useful attachments, such as a Paint and Varnish Sprayer, Moth Sprayer and Deodorizer, etc.



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Has automatic heat gauge for all materials—cannot overheat. Thermostat control saves electricity! $5.95 plus your old iron.

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Editor's Chat

EAT BREAD OR STARVE?

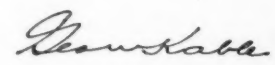
When I first tackled this job of editing I told you that I differed with a lot of folks and had some hobbies. One notion which holds forth in my mind is that it is better to live on bread than to starve because we cannot have cake.—Take wall switches, for instance. Now where one installs wiring in a home, it is good practice and often a great convenience to have wall switches near the doors to control the lights in a room, or at the foot and top of stairs to turn on or off the stair or hall lights. It is cheaper to install these switches when the house is being wired than to add them later. You may think that turning a switch on a lamp hanging to a cord in the middle of the room is so much better than to light matches and ease across to the oil lamp that you will never miss the wall switches. You are wrong there. You will miss them. But! It costs about the same to put in a wall switch as it does to install a double convenience outlet. If you can afford both,—fine. If you are honestly convinced you cannot afford both, then you must balance the convenience and safety of being able to turn on a light before you walk into a room or stairway against the convenience and safety of having a place to plug in a floor or study lamp, a vacuum sweeper, iron, fan, toaster, heating pad or radio. Here's where the bread and cake come in.

There are some places such as attics, cellars, stairways, some bedrooms and other rooms which are not too nicely finished, where a pull-chain lamp-holder and long cord might appropriately take the place of a wall switch and leave money for extra outlets which are almost sure to be needed. Pull chain switches usually wear out or get out of order quicker than wall switches, so they should not be used where they are to be snapped many times a day. Cords can be attached to pull chains successfully, only where the lamp is held rigidly; not on drop-cords. Fasten a heavy fish-line or small chalk line to the pull-chain. Turn the lamp-holder so the chain will pull straight out through the opening in the holder (not at an angle) if you want the switch to work easy and last longer. If you cannot carry the string in a straight line to the point where you want to turn the light on and off, thread it through screw-eyes. The cord must pull freely and not bind, and it is best not to have too many turns. Two cords may be attached to the same light and carried in different directions. The light may be operated from any point where the cord can be reached. For instance, a lamp in an upper hall may be placed so it will light the stair and so the cord will hang down along the stair wall just inside the lower stair door. The lamp may then be turned on or off from either downstairs or upstairs.

I recommend wall switches. If you do not have them or cannot afford them, the pull-chain and cord might be a real convenience in a few locations.

THE WAR AND FARMING

The stock market "reached for the sky" both in prices and volume of sales in one day following the declarations of the existence of a state of war by Britain and France. It might as easily have thrust its head in the mud as it did in 1914 if Britain had not stepped in and frozen sales. Farm commodities have also shot upward like released balloons, being limited only by the ceilings officially placed on daily rises. How will this affect farming? Secretary Wallace has said figuratively to "keep your shirt on." There are large existing surpluses to be disposed of. World crops are harvested for this year. The war may be ended before Spring. There is no sane economic reason for wheat prices going up 30 per cent in four days. It is pure gambling. If you gambled by buying a farm during the last war, you probably know that there are losers as well as winners in the game. A safe procedure might be to let the gamblers do the gambling, and the farmers do the farming. The farmer who habitually endeavors to produce economically and who equips himself to get along with a minimum of hired labor, if necessary, will be in a position to reap full benefit from increased prices and be best prepared to take the shock of a decrease, if it comes.



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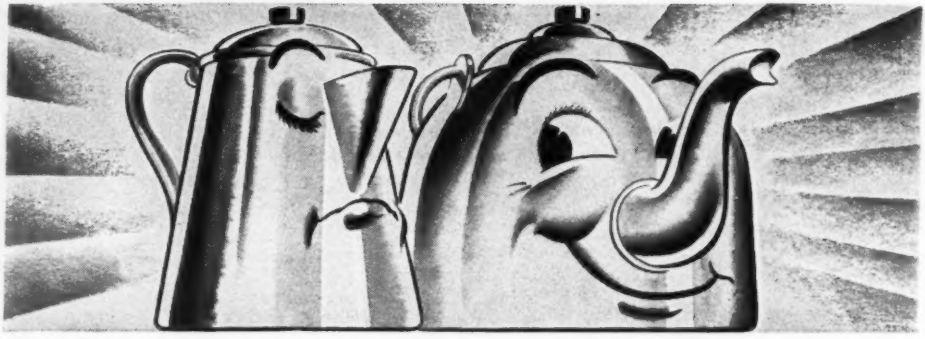

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WORLD'S FAIR MODEL with 3 Select-a-Heat Calrod units each with 5 speeds. Oversize Directional Heat Oven, 6-Quart Thrift Cooker. All Porcelain Enamel finish.

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HOTPOINT provides safe, dependable, flameless hot water at low cost. Get all the facts from the electric company. Round models also available.

HAROLD BELL WRIGHT

He Finds Happiness in Living and Inspiration for Writing on His Electrically Equipped and Efficiently Managed Farm in California

By EARL BURKE

HAROLD BELL WRIGHT, widely-known author of popular books that became best sellers, chooses to live on a farm because he and Mrs. Wright like that kind of life the best.

"Country living has advanced amazingly in recent years," he says, "and through the use of electricity—the introduction of modern appliances and labor-saving devices—old-fashioned drudgery can be eliminated and farm life today made convenient and comfortable."

The famous writer can speak from experience, for his boyhood was spent on a farm in New York State, in the days of oil lamps, water that had to be pumped from a well outdoors in zero weather, and the endless round of chores and farm tasks done by hand labor.

He also knows farm and city life in many sections of the country. Before becoming a successful author, he was an earnest young pastor of churches in the Ozark Mountains; Pittsburg, Kas.; Kansas City, Mo.; and in Redlands, Calif. He characterizes the average city home in closely-built districts as a place where people "don't live—they just get by."

After some years of outdoor life while operating an Arizona cattle ranch, four years ago he bought 60 acres of unimproved land, about 30 miles north of San Diego, Cal. Once part of the home rancho of Juan Bautista Alvarado, Mexican governor of California 100 years ago, General Stephen W. Kearney and his men marched across it on their overland journey in 1846 from Fort Leavenworth, Kas., to San Diego, when the United States occupied California.

Mr. and Mrs. Wright cleared and developed the property. Because of its rolling contours, they named it "Quiet Hills Farm."

Quiet Hills has been organized to be as self-sufficient as possible. The chief objective is to provide the family food supply, which is almost entirely home-grown.

More than 120 different kinds of fruits and nuts come from three different orchards—deciduous, citrus and sub-tropical. The deciduous includes 16 varieties of peaches, six of apples, also almonds, apricots, crabapples, chestnuts, filberts, olives, pomegranates, quinces, figs, nectarines, prunes, persimmons, plums, walnuts, cherries, mulberries, pecans, pears and pistachio nuts. In the citrus orchard are seven varieties of oranges, also grapefruit, lime, tangelo, comquat, limequat. loquats, lemons and tangerines. In the sub-tropical orchard grow guavas, roseapple, Natal plum, avocados, jujubes, sapotas, cherimoya and Queensland nut. There are also 14 varieties of grapes and five of berries.

Fresh fruit grows in these orchards the year around. The farmer's wife cans a supply of fresh berries and small fruits for winter use. Mrs. Wright also makes different kinds of jellies, marmalades and preserves.

Electric irrigation pumps provide the water supply for irrigation.

Pedigreed Plymouth Rock chickens are kept in electrically lighted pens. Starting with six hens and a cockerel, the flock has grown to fifty. "When our fryer supply seems low," explains Mr. Wright, "there's an electric incubator where we put in a few more eggs. Later the baby chicks come out like biscuits from the oven."

Both the Wright home and the farmer's cottage are completely equipped with all modern electrical appliances and facilities. Electricity cooks the

Mr. Wright hiking through the oak grove.

View from front porch of the Wright home.

meals, washes the dishes, runs the laundry, irons the clothes, operates the sewing machine, does the housecleaning and a host of other household tasks. An electric hedge trimmer is used to keep the shrubbery in shape. A radio furnishes news and entertainment.

Mr. Wright does not play golf, but finds his chief recreation in making useful articles in his workshop. The shop is equipped with many tools, including a drill and a lathe operated by electricity. He does wood carving and artistic metal work. Handsome door hinges and decorative iron grill work to be seen at Quiet Hills are his handiwork.

Writes and Farms by Labor-Saving Methods

Mr. Wright lays out his writing in the same labor-saving way he manages his farm—by planning and organization, plus common sense coupled with a touch of genius. After the story is clearly outlined he writes swiftly in longhand.

"Of the seventeen books I have written," he said, " 'The Winning of Barbara Worth' gave me the most pleasure in its creation." The sales of this one book have reached over 1,600,000 copies. In book publishers' records listing best sellers since 1875, it ranks among the first ten. Others of Harold Bell Wright's books to top the million mark are "The Shepherd of the Hills" and "The Calling of Dan Mathews." His first book, "That Printer of Udells," was published in 1903.

Physically, the author is tall and slim, face bronzed by outdoor living in the Great Southwest.

He enjoys life on his farm, because it fits into his field of writing. Here he finds peace and quiet, the inspiration that enables him to produce outdoor books, the kind he likes to write.

Electric Plucker Defeathers 80,000 Ducks Per Year

ON Long Island and in certain sections around Boston there are duck farms where the ducks are so numerous that from a distance the fields seem to be carpeted with ducks. It is where the famed Long Island (or should we include Bostonian) duckling originate. It is a big industry with a highly specialized technique in hatching, growing and marketing the ducklings. To me a duckling had always been a fuzzy, cuddly little thing; but not these L. I. Epicurean ducklings. At 9 to 10 weeks they weigh 6 to 7 pounds and are ready for market.

The picture shows "Doug." Hayes, Selectman of the town of Sterling, former President of the Massachusetts Duck Growers' Association, and duck grower par excellence. That twinkling smile has a reason, for Mr. Hayes is a good business farmer, has an attractive New England home well equipped electrically (Mrs. Hayes has used a dishwasher for years) and he takes an active part in running the business of his community.

It was the electric plucker that attracted our particular attention. It is a Bingham Plucker, made in England, operated by a 1 h.p. motor and costing $300. Some ingenious American should be able to build a better one for less. But this plucker rough picks a duck in 45 seconds as against 5 to 10 minutes by hand. The picking opening is shown at the left of the machine. Steel discs rotate in this picking head, the plates being held apart at the top and rear and squeezing together at the bottom of the opening. The large circular part of the machine at the right contains a suction fan which creates a vacuum, drawing the feathers between the discs which clamp them and pull them out. The feathers are blown into collecting bags and sold.

Mr. Hayes has picked 80,000 ducks per year with this machine.

Wash the Paint Brush

These paint brushes used to touch up the garden gate will come in handy if soaked in turpentine and washed in warm soapsuds before they are stored away.

Left: Two-hole spring type sheller driven by a ½ horsepower motor on farm of Charles Korba, Kolsomo, Indiana.

Right: Cylinder sheller operated by a ½ horsepower electric motor. Capacity about thirty bushels per hour.

Below: Cylinder sheller with attached sacking elevator in use on the Westinghouse Proving Farm near New Hope, Pa. Driven by a three horsepower portable motor.

MOTOR DRIVEN CORN SHELLERS

Single and Two-Hole Shellers May Be Operated with ¼ to 1 h.p. Motors—Cylinder Shellers with Motors of ½ to 5 h.p.—New Equipment Available

By T. E. HIENTON

SHELLED corn, either whole or ground, forms an important part of the feeding ration of practically all classes of livestock and poultry. Shelling is a task, then, which must be performed on many farms where corn is produced and fed. Power for shelling is being furnished increasingly by electric motors as they are installed on hand-driven machines already in use or purchased as a unit on shellers of more recent design.

Two types of corn shellers are in rather common use at the present time, the spring sheller and the cylinder sheller. The first type is frequently classified according to the number of holes or openings, as one-hole, two-hole, four-hole, etc. Cylinder shellers have no similar method of classification but are listed by model numbers of various manufacturers.

One and two-hole shellers are usually listed for hand or power use. The one-hole size can, in most cases, be operated satisfactorily by a ¼-horsepower electric motor. The two-hole size is being driven satisfactorily by ½-horsepower motors without bagging elevators or wagon box elevators. The addition of such equipment will require the use of a larger motor, one-horsepower being commonly recommended.

Cylinder shellers until recently have been of a size which required a motor of two or more horsepower to operate. At the present time there are available machines of this type recommended for use with ½-horsepower and with 2-horsepower motors. Numerous farmers in the corn belt who have been using 3- or 5-horsepower motors for driving feed grinders have installed cylinder shellers to be operated by the same motor. Such an arrangement results in more economical operation of the motor because of more hours of annual usage. All motors used to drive corn shellers should be of the repulsion-induction or capacitor types, where operated on single-phase service.

Exact capacities of various sizes of shellers are not available but a compilation of manufacturers' ratings indicate 10 to 25 bushels per hour for a one-hole sheller, and 25-60 bushels per hour for a two-hole sheller. The cylinder sheller operated by a ½-horsepower motor is rated at 30 bushels per hour and the 2-horsepower cylinder sheller at 75 to 100 bushels per hour. Larger cylinder shellers are of greater capacity depending upon the size of power unit. In one test, conducted at Purdue University with a 5-horsepower motor operating a cylinder sheller similar to that shown in a photograph accompanying this article, a capacity of 120 bushels per hour was experienced. During this test the motor delivered approximately three-horsepower.

WHAT SHOULD WE BUY NEXT?

Irrigation Pump or Sharp Freezer?—That's the Question. 1938 Refrigerated Apple Storage Operated at 2c Per Bushel. We Like Our Range, Refrigerator and Appliances. Why Do We Do What We Do?

By ED. W. MITCHELL

Dear George:

WHY do we do what we do? Your recent letter asking me what's doing electrically on my farm this year, has been unanswered because I was curious to know myself just what we would do next. We put in *some* new electrical appliance nearly every year, but it is only after many family conferences and the general elimination of all but what the majority votes to be the most needed.

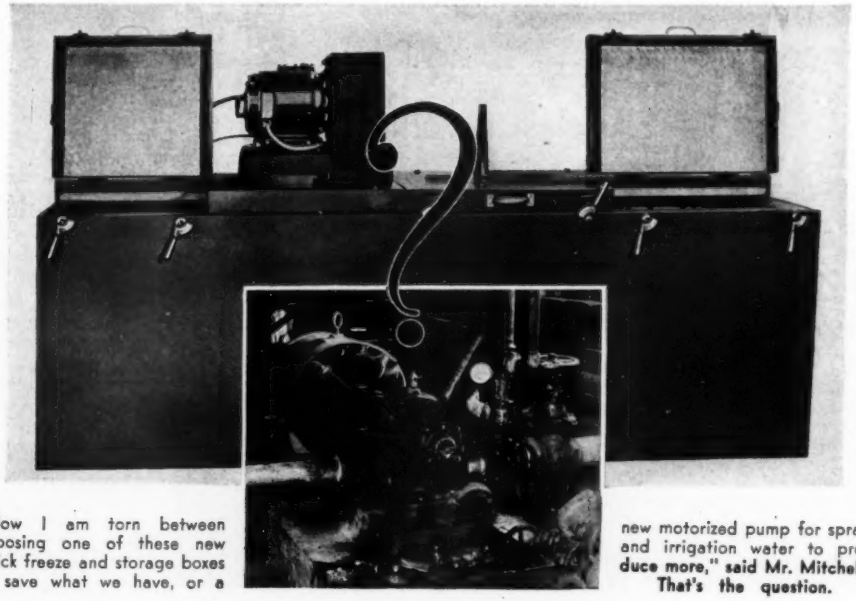
Ed. is a farmer of Stuyvesant Falls, N. Y. Because he knows his farming he is also "Answer Man" on the popular farm program over radio station WGY.

Last year, you will recall, I made the big common storage in the barn into a refrigerated apple storage by improving the insulation and putting in one of the new air conditioning outfits. It has a capacity to refrigerate 4,000 bushels of apples, and by dividing the barn into two rooms, using a big ventilating fan on cool nights, and loading in the Ben Davis and Romes as late as possible, I got good refrigeration on the 8,000 bushels the two rooms will hold.

My idea in overloading this small equipment is to reduce both original cost of machinery and operating costs. This outfit cost only $1,800 and operating cost was about 2c a bushel for the whole season up to April. If I were building a big storage, I would prefer two small machines rather than one big one. The two could carry the peak load, and one would be sufficient for most of the time. If either machine is laid up for repairs, the other is on hand to keep things going.

My wife suggested an electric chair as the next electrical appliance for the men on this farm, but a kitchen ventilating fan, and a new stove cleared the track for more electrified farm machinery, so now I am torn between choosing one of these new quick freeze and storage boxes to save what we have, or a new motorized pump for spray and irrigation water to produce more. We have been pumping water for spray and irrigation with an old gas engine which brings me back to my meditations as I started this letter. Why do we do what we do?

We put in electric lights because no one had time to fuss with lamps and the lamp lights were too inefficient. I put in an electric water pump, having graduated from the bucket brigade and become very weary of pumping by hand with a big two-cylinder pump attached to a pressure tank.



"Now I am torn between choosing one of these new quick freeze and storage boxes to save what we have, or a new motorized pump for spray and irrigation water to produce more," **said Mr. Mitchell. That's the question.**

Hand pumping for a domestic water supply can become real drudgery.

I put in the electric refrigerator because I hated so to dig ice out of the ice house, and the electric washing machine and mangle were more or less thrown in to balance the account between house and barn.

I forget the final reason responsible for the electric cook stove. I think it was because an oil stove ran amuck and filled the house with greasy soot shortly after a paint and paper job; or maybe it was because I wanted to get my kw.-hr. consumption up so my rate would drop to a lower bracket. There is just enough Scotch in me to spend a dollar to save a dime. Someone made the unkind remark that I would skin a flea for its hide and tallow if I had to spoil a dollar knife to do it.

At any rate, the old stove has been an uninterrupted blessing for over ten years and the new one promises to be better and last longer.

The coffee percolator, toaster, and waffle iron came in psychologically, if you know what I mean. There is a lot of talent and temperament in our family, and each one thinks he or she is the only one who can make good coffee, toast, waffles and a few other things. By having the operation performed at the table where each can have a finger in the pie, all criticism of the product is avoided, and the praise or blame falls on the committee of the whole, so to speak. Furthermore, it saves the chief cook considerable mileage, for repeat orders.

Lots of the minor gadgets have come as presents. Hair curlers, heating pads, electric blankets, fans, spot heaters and such. From fad and fancy they soon become necessities, and I can think of none we would be without. That reminds me that the next item must be a new mixer. I borrowed the old one to adapt it for some emergency farm job and it never came back to the house. I forget just now what a wonderful invention I had contrived, but it consumed one mixer and one old vacuum cleaner in the process of construction and wound up on the junk heap; another fortune just beyond my grasp.

I am a little bit like the farmer who would not mend his roof in the rain, and didn't see the need for mending it when it was not raining. We are about done this spraying season, and will not irrigate any more till next year. During operations I was determined to replace the gas engine with an electric motor before another season rolls round. When we want water we want it right away, and do not want to spend that particular day tinkering up a temperamental gas engine. Neither do we want to spend time and energy running to the pond and back to start and stop the engine.

Want Switch Conveniently Located

We want the starting switch at the barn where the water and spray stuff are mixed so all hands can be busy and no one has to stay at the pond and hold hands with the engine. But as I say, that need is not pressing till next spring and now we have a surplus of vegetables in the garden, and broilers in the pen, and a flock of yearling hens to cull that are worth about fifty cents if I sell them, and a dollar if I want to buy them back from the butcher the next day. I would like to take a day off and dress up the whole lot and freeze them for my own particular and private use during the months to come. I am full of string beans up to my eyebrows these days, but when snow flies I will be glad to get into them again.

We are all a little gun-shy of the quick freezer, largely, I think, because it is hard to guess just who will get stuck with the job of dressing poultry and picking and processing the garden truck. When these jobs come in small doses, one takes his turn gracefully and ducks the next time, but I have a hunch I may be stuck with a dozen or so chickens to dress whereas my real talent is carving after they reach the table. I think I will vote for the new pump and motor at the pond and make sure of a convenient water supply for spraying and irrigation for next year.

That's enough for this session. I will give you more of the details on some of these electrical gadgets I enjoy so much when I do not feel so much inclined just to have a little visit with you.

—I'm proud I am a farmer—

Apples in Farm Storage

SCATTERED around over the United States from West Coast to East and down through Virginia and Indiana are a hundred or two farm cold storage plants, now full or being filled with apples. They are not just places of storage. They offer a means for quickly cooling the apples after they are picked so that quality may be preserved. They permit sorting and grading at a time when labor is not in such great demand. They save hauling on the road when hauling equipment is needed in the orchard. If intelligently planned and designed, they will save on storage costs and enable the grower to market his fruit in an orderly manner through the year when prices may be more to his advantage. It also gives him a chance to get out and rustle for a good market if he chooses to do his own selling.

Up along the Hudson in Central New York one power company reports that it is supplying service this fall to 42 farmer-owned private and cooperative cold storage plants. These vary from 5,000 to 25,000 bushels capacity with an average of about 10,000 bushels. Growers give the complete costs of plants including building and equipment at 50 to 60 cents per bushel capacity, with annual storage costs of 10 to 13 cents including power, plant investment and depreciation. Commercial storage rates in the same territory run 18 to 23 cents per bushel.

Fruit storages with the modern equipment now available merit study.

One fire is one too many. Stop it before it has a chance to get started.

THE annual fire loss on American farms is reported by the National Fire Protection Association to be in excess of $100,000,000. Where farm fires do occur, the loss amounts to 85 per cent of the property involved, according to the Electric Water Systems Council. This is in contrast with only 5 per cent loss in cities. Losses of life, livestock, feed, keepsakes may be covered by insurance but they cannot be replaced by insurance. Because of this 17 to 1 handicap and the disastrous results of farm fires, this article is being written in the hope that it may help someone in preventing a part of this great loss.

Causes, Place and Time of Fires

"According to recent engineering reports, the principal causes of farm fires, named in the order of their importance, are: Defective chimneys and heating apparatus, sparks on combustible roofs, lightning, carelessness in use of matches and smoking, spontaneous ignition, gasoline and kerosene, misuse of electricity.

In order to know how to prevent or fight fires, one should know where and when they are most likely to occur. In a survey by Iowa State College (Bul. 296) dwellings accounted for 50 per cent of the rural fires and 45 per cent of the loss; barn fires represented 15 per cent of the total number and 20 per cent of the loss. Stores, schools, elevators and feed mills, and churches ranked next in order with all other farm buildings losses of minor importance. The largest number of dwelling fires occurred between January and April, which corresponds with the chief losses due to defective flues and heating plants and sparks on roofs. Barn losses were at their peak from July through September with the finger of incrimination pointing toward the spontaneous combustion of hay.

Fire Prevention

It is to our discredit that most fires are due to carelessness or neglect. The best way to evade fire loss is to prevent fires starting. Here are some suggestions for doing it:

Learn to be careful and not to neglect, before fires start. Afterward it is too late.

Chimneys. Build chimneys of materials which will not crack or collapse. Don't lay bricks on edge. Avoid supporting chimneys on timber construction or brackets; or if so supported, examine more frequently for cracks and repair them. Make flues tight; it is best to line them with tile. Two or more pipe connections to a single flue is a hazard; be sure the openings not in use are closed tight with metal covers. Inspect and clean chimneys and flues twice each year and always before starting winter fires.

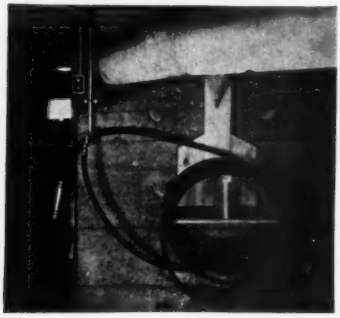
Roofs. Keep the roof and gutters clean and free from litter, leaves and moss. Fire resistant roofing material is desirable.

Stoves and Furnaces. Coal and wood stoves should stand on metal bases or concrete. Equip fireplaces with spark screens. Examine stoves, furnaces and smoke pipes for breaks and imperfections each fall, and clean and make necessary repairs. Don't use wooden containers for hot ashes.

Lightning. Lightning rods property installed and maintaned definitely reduce the fire hazard from lightning. Good ground connections (galvanized ¾ in. pipe driven 8 feet or to continuously moist ground) are absolutely essential for effect-

ive protection. Keep the lightning conductors away from electric wires and conduit to prevent charges jumping across. Metal roofs are good protection if well grounded. The feeling of safety during storms is worth the cost of rodding.

Gasoline and Kerosene. Store combustibles in an isolated place, or large quantities in underground tanks. Never use gasoline or kerosene to quicken or revive a fire. Avoid inflammable cleaning fluids in the house.



Have the hose handy and equipped with a smooth bore nozzle. Rubber hose lasts longer than canvas. The switch above the hose-bib starts the pump motor.

Waste and Rubbish. Keep house, barn and adjoining buildings free from oily rags and waste, and from litter and rubbish, especially around stoves and furnaces.

Hay. Cure hay properly before storing, or if questionable, store it in a separate building or silo. Salt at the rate of 10 pounds per ton of hay will reduce heating of damp hay but is not a sure preventive. Repair leaky roofs and side walls. Loose, damp hay is a greater hazard than chopped hay.

Electric Wiring and Appliances. Flat irons are made to get hot—heads to remember not to leave them where they will set fire. Disconnect appliances when they are not in use. Equipment and methods effective in starting fires include: Improvised extension cords of wire not approved by the Underwriter's Laboratories; frayed, worn or kinked extension cords, or those with fine wires sticking through the braid; extension cords supported on nails or pipes; circuits overloaded by using electric irons in lamp sockets or connecting too many lamps or appliances to one circuit or outlet; using oversize fuses or pennies behind fuses. Just remember that electricity used intelligently is as safe as a street lamp; abused or used carelessly, it can cause fires. This is one reason for having wiring done well and inspected for safety as provided by the National Electrical Code.

Fire Protection

Running water, hose, ladders, axes, chemical fire extinguishers should be kept in condition and ready for immediate use about the house and barn where they are most likely to be needed. A telephone for calling a fire department or neighbors sometimes saves buildings.

"A few gallons of water on a fire when it starts is more effective than 10,000 gallons when the fire gets under way.

Water Systems. The smallest commercial water systems have a capacity of 210 gallons per hour, or 3½ gallons per minute, or less. These systems will furnish a stream, through ordinary garden hose, of some value in combating incipient fires or wetting down nearby buildings. They cannot be expected to be effective on a fire that has gained any headway.

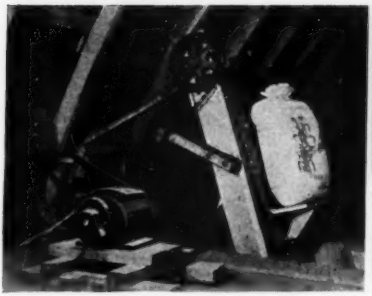
An effective fire stream through a 3/16 or ¼ inch nozzle requires 8 to 10 gallons per minute, which quantity should be available for at least two hours.

This size stream will call for a pump of 500 to 600 gallons per hour capacity which is also a standard size with pump manufacturers. Even this size stream should not be depended on to stop fires well under way. It should be ready to use quickly on the fire and will be very helpful in protecting other buildings. The additional cost of such larger pumping units need not be charged entirely to fire protection as the water may be used for garden and lawn irrigation, and the more rugged pump will seldom be required to run under full capacity which will extend its useful life and reduce maintenance costs. For such a pump to be most effective, the farm should be piped with 1½ or 2 inch pipe to all strategic points, with frost-proof connections for 1½ inch hose. Use fifty foot lengths of hose which may be put together quickly when needed. Three lengths are desirable with hydrants placed so all buildings may be reached. Use smooth bore nozzles on the hose—7/32 inch for 500 gallons per hour and ¼ inch for 600 gallons. Where wells will not supply that quantity of water, cisterns or farm reservoirs of about 1,500 gallons capacity (6 ft. x 10 ft. x 4 ft.) will furnish a reserve supply. A tank on a hill or elevated tower, if high enough, would give gravity pressure, or *any* added elevation will increase the capacity of the fire pump.

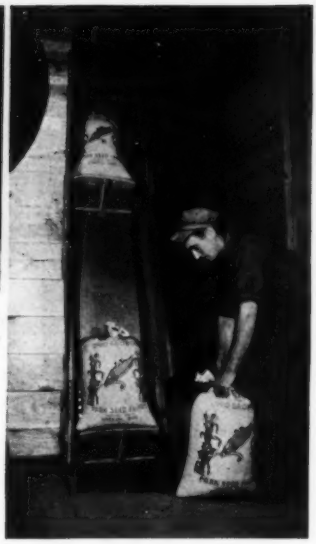
Community Fire Fighting. In many rural communities over the United States fire fighting brigades have been organized and special equipment, such as pumpers, hose and chemical trucks provided. The equipment might be as simple as an irrigation pump mounted on a truck. In some cases towns and small cities have cooperated with country communities in making equipment available. This is not only an effective good-will producer, but of economic value to the town, which often is dependent upon the patronage of the rural areas. If equipment is available, it is necessary to have a water supply. It may be provided by damming small streams, by building concrete lined cisterns or open tanks which may add a decorative touch to farm grounds or be used as swimming pools. The tank may be kept full by a ram or the farm water supply system. It should hold enough water for an hour's pumping with the fire apparatus.

No bull but a scrub will Dan Dubb keep.
He says he wants his calves real cheap.
So his cattle get ornerier every year,
And he gets raggeder, front and rear;
Till the neighbors say, twixt the bull and Dubb,
They can't tell which is the scrubbier scrub.

JOSEPHINE L. BAKER,
Midlothian, Texas.



Right: Head of the home-made elevator showing old pump jack being used as a speed reducer. Note wood cross-pieces between chains above and below flight blocks. Motor controlled by push-button from below.



FARM ELEVATORS

By ROBERT N. PARK
Manager, Park Seed Farms
Urbana, Ohio

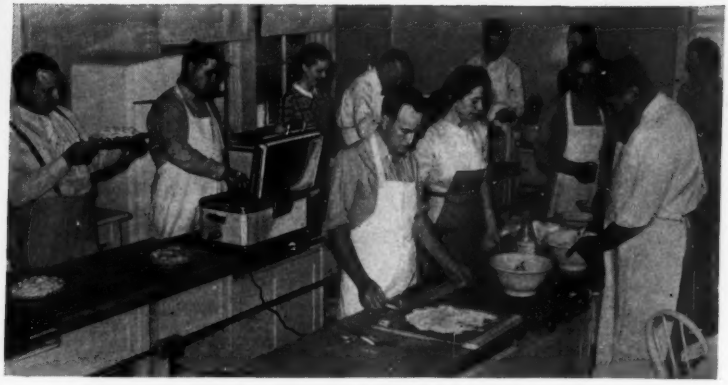
Above: Lower end of elevator. Cross-boards are made of one-inch oak bolted to flight links on the chain and braced to a follower cross-piece as shown.

LIGHT portable elevators and conveyor belts can be built at very low cost for any job, and with mounted motors they are worth many times their cost. The farmer who has electric current available has a convenient and powerful worker at his command. We have demonstrated this to ourselves on our own farm where we produce certified seed, and where ear corn and sacked shelled corn must be moved up or down from one elevation to another.

This is the lower end of a commercially made standard drag elevator specially mounted on rubber-tired casters for shifting from one side of the driveway to the other for convenience in elevating.

An efficient bag elevator can be built for about $35.00 for a 12-foot lift. To build the elevator that we have been using for three years, we made a frame of 2x6 pine, covered with sheet metal. The shafts, sprockets and chain were purchased. The flights are one-inch oak bolted to flight links, and braced to wooden bars below each flight. For a powerhead and speed reducer at the top of the elevator we used an old pump jack driven by a ½ H.P. motor. This elevator carries a constant load of 200 pounds of sacked material. Reversing is easily done with an accessible brush reverse on the motor. An elevator of this type can be easily constructed for ear corn or small grain by using more flights and building a hopper at the base.

In loading and unloading cribs along a ten-foot driveway, an elevator that will swing from one side to the other is often more useful than a stationary elevator. To accomplish this we used a standard-make flight elevator, mounting the lower end on rubber-tired wheels. The motor is mounted on a frame bolted to the back, and drives with V belts onto the flat pulley furnished with the elevator. It was necessary to relocate the bearings and install a roller chain drive to reduce the speed to 100 R.P.M. The head of the elevator is suspended from a chain in the cupola, allowing free swing. By using an 8-foot swivel hopper the dried-corn cribs can be unloaded directly into the elevator with a minimum of shoveling, for elevation to the storage floor above. The use of electricity offers a challenge to the man who wishes to use his brain to save his back. Cost of installation can be small and in conjunction with other electrical appliances the operating cost is almost negligible. The volume of work that can be done is multiplied many times over hand work.



Oklahoma vocational agriculture instructors learn about electrical cooking in special short course at Oklahoma A & M College, Stillwater, Okla.

TEACHER TRAINING

Oklahoma Vocational Agriculture Instructors Have Special Courses in Farm Electricity

By ROY P. STEWART
Executive Secretary,
Oklahoma Association F.F.A.

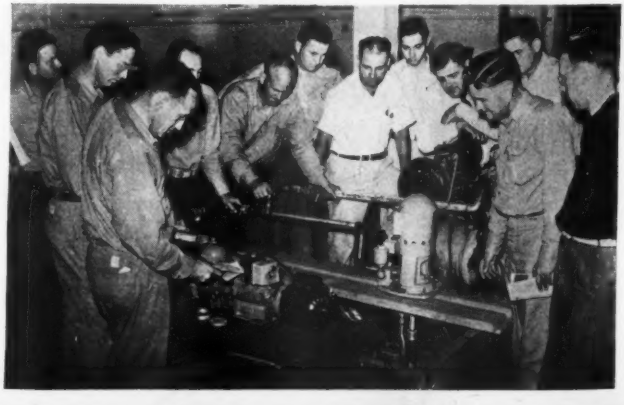
MORE than one-half of Oklahoma's 162 vocational agriculture instructors have recently completed a special course in electrical skills which is said to be the first school of its kind to be held. It was offered by the agricultural engineering department of Oklahoma A and M college, Stillwater, in cooperation with the schools of mechanical and electrical engineering and the Oklahoma Gas and Electric Company. The courses included cooking, hydraulics, wiring, metering, feed grinding and mixing and other phases of electricity adapted to farm use.

In the cooking courses, 20 instructors cooked their own meals—three large ones daily—at a per man cost of 90 cents per day. They were supervised by home economics experts but allowed to make their own mistakes in order to learn the correct way to prepare food electrically. During the week in which they cooked their meals, the men had members of the state vocational agriculture staff and various faculty members as guests.

In the hydraulics course, instructors studied various methods and types of pumping machinery, measurement of both current used and water pumped. A 10,000 gallon tank in the college engineering laboratory supplied plenty of water, and five types of pumps including piston, jet, turbine and centrifugal were tested. They learned to test for friction, worked out irrigation problems and plumbing for barn and farm home under the direction of C. E. Perkins, a member of the college teaching staff.

Under Leslie Hazen, head of the agricultural engineering department of the college, the men studied feed grinding and mixing machinery, methods of cutting and storing ensilage and other feeds with equipment adapted to the individual farm. Machinery used in these studies as in the others, was loaned by various manufacturers, while details of the courses were arranged by Roy Hayman, Head, Rural Electric Dept., Oklahoma Gas and Electric Company.

During the course, which lasted three weeks, with daily classes two hours in length for the various skills, a number of visitors from schools and utility companies attended part of the classes. They included P. T. Montfort of the agricultural engineering division of Texas A and M college; C. L. Wilson, Texas Power & Light; W. A. Campbell Southwestern Light & Power Company, Chickasha, Okla.; Loyal Bollinger, of the Patton Plumbing Company, Oklahoma City, and H. E. Bowen, A. A. Brown, H. P. Hoheisel and Roy Hayman, all of the Oklahoma Gas and Electric Company.



Vocational agriculture instructors studying electrical water pumping and measurement.

FRIED CHICKEN all the Year at LITTLE COST

By CAROLINE S. COLEMAN

IN the south we practically live on fried chicken. Time was, when "fried chicken time" lasted only through the spring and summer, and city cousins became very friendly with us about that time. Now the fryer season lasts all year. Those who have good, standard sized electric brooders find it easy to brood chicks all year. But we now have friers, too, at all seasons, even though we raise only a few at a time and with inexpensive equipment. We learned to grow chicks with only a sixty watt bulb for a heating apparatus and with a very simple homemade brooder.

In our back yard is a tiny building with double walls packed with sawdust between walls. We had erected this freeze-proof house to hold an acetylene light generator before electricity came our way. It was easy to attach an extension to the power line which conducted electricity to the barn near-by. The light cord to which a bulb was attached was hung low, almost to the floor. We first used a small box for a brooder until a tinner made a small hover in imitation of the commercial brooder. The bulb hangs down in the center and the chicks hover about it keeping plenty warm. The lamp has to be protected with a piece of screen wire to keep the chicks from getting burned. The floor of the tight little house is

(*More on page* 26)

Lamps Aid Frost Fight

Quniter Bashore, Covina, Cal., inventor, is shown with one of the lamps which he used to protect his lemon grove during recent frosty nights. He has installed 128—260 watt heat lamps of the type used by physicians in electrotherapy, on a two and one-half acre plot of lemon trees and maintained frost resistant temperature throughout recent cold weather. His theory is that the infra red rays keep the chlorophyl active in the leaves and that while the leaves are absorbing light neither the foliage or fruit will freeze.

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Take Off Your Hat to The MYERS

Electrical HOUSEKEEPING

Conducted by GAIL MEREDITH

When You Turn on the Lights This Fall

WHEN you do over your living room today, you realize, if you have been studying such things, that the light you use is a very important factor in its beauty, as well as in the comfort and well being of your family.

Quite likely, and quite wisely, you are thriftily considering how to make the most of the light you have. You do that in the daytime by keeping the windows clean and shining, by raising the shades, and by using sheer curtains, or draping back heavier ones. If every bit of daylight is precious, you take the plants from the windows, and push away high backed chairs to give it a chance to pour in. But you make sure some of those chairs stand so anyone sitting in them gets a good light for reading or sewing.

The lighting you supply at night needs just the same careful supervision. The lamp bulbs themselves, and their enclosing shades should be washed often to keep them free of dust.

Now if you have been studying lighting carefully, you know that you should have a good general light in the room. How much? Well, a good lighting engineer told me, not long ago that an excellent way to test the lighting was to stand at one end of the room and look at it carefully.

Are there strong patches of light and dark? Do the colors on the walls, in the curtains and the chairs show up properly? Is there a little pool of light around each lamp and then indistinct dusk beyond?

If there is, you haven't enough general light in your room. You need somewhere about five to eight footcandles to have a good soft light throughout the room, no brilliant patches against hard shadows.

You know undoubtedly, that you ought in planning the lighting for your living room, to have a good light, strong enough for reading or sewing, near every place where some one sits to do these things.

If the children study on a table here, that spot needs good light. If you play games on a card table, you want one lamp that will light the table well.

For reading and working lamps there is nothing quite so good as the IES lamps, floor lamps or table lamps. They give the right amount of light and the right quality of light, filtered through glass, freed of glare, shining against the white lining of the shade and reflected both up and down. These lamps properly placed, will give you good general lighting as well as the special lighting for different places in the room.

• • •

Comfort on a Cord

THESE warm fall days often start out too cold for comfort and end with everyone shivering around in sweaters. And still you feel that it isn't really cold enough to start the winter fires with all their litter, muss and work.

That makes portable heat such a satisfactory way to carry a little comfort around the house. You may want it for the children to dress by; you may want it while you are bathing the baby; you may want it out in the roadside stand before the sun gets high; and even in the sunny window where Grandma sits to read or sew or watch the road.

Whenever you want it, electric heaters are ready to give you a bucket of heat that will warm you up in a hurry. They are so small you can carry them in one hand, but big enough to take the chill off a closed room, to make the bathroom warm enough for a bath, and to bring the pleasant re-

HOW I CHANGED MY KITCHEN

(Winning Letter for July Contest)

Oh yes, I am a changer all right. No one gets more pleasure when changing things, and what a big improvement I have made in my kitchen.

My kitchen was just an old fashioned farm kitchen, a southwest room, twelve by thirteen feet. The walls and ceiling were painted a very dark blue. There were two full length windows, one on the west, and one on the south side. A cistern pump at a little sink with a cupboard built around it was on one side of the room, there was also a well water pump in the room, a wood and coal range, a three burner oil stove, an oak kitchen cabinet, a big dish cupboard and a table and chairs were the furnishings.

Now the two full length windows are gone, and in their place is a set of three short windows, with full length screens, on the west side of the room. The walls and ceiling are painted a very light green, and the woodwork is ivory. The linoleum on the floor is a light brown, tan and green in a tile pattern. The little, tied back, white ruffled curtains have a green figure in them.

Below these windows is a large white cabinet sink, where we have running water, both hot and cold, that is pumped by an electric pump and heated with an electric water heater. At each end of the sink is a white steel cabinet, with porcelain tops. What a help, when washing stacks of dirty dishes for a large family. When the dishes are drained on the drain board at the sink they require but little drying.

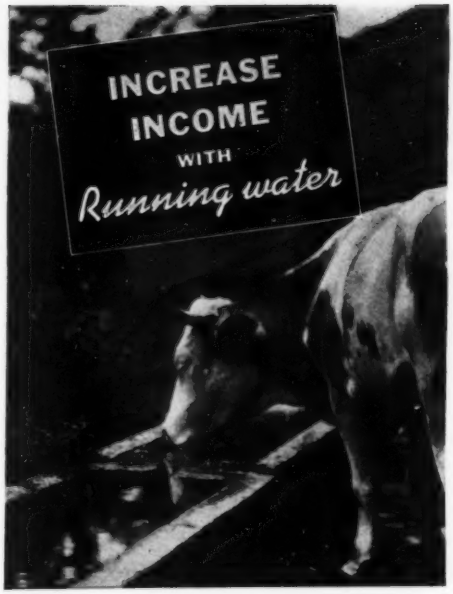
On the south side of tho room is the kitchen cabinet, it's the same cabinet I have always had, but I painted it with white enamel, so it looks like new. Next to the cabinet is a built-in wardrobe where our coats are hung, and then a door that goes out into the enclosed back porch. On the east side is the table and four old chairs, that I also painted with the white enamel, and a door that goes into the dining room. And on the north side is a big seven foot refrigerator, an electric range, and a white steel dish cabinet, that takes the place of the old cupboard, also a little white steel medicine cabinet.

On top of the refrigerator is a little ivory colored radio. Work in the kitchen is so much less tiresome, when listening to interesting radio programs.

An electric clock on the wall takes the place of the old alarm clock we used to have.

My kitchen looks so cool and clean, and really, it's just fun to keep it clean. So many times I think, how wonderful it would have been if our mothers and grandmothers could have had a kitchen like this.

MRS. HAROLD MANN,
R.R. 1, Jonesville, Mich.



Year after year, Goulds CID Water Systems pay dividends in dollars and comfort.

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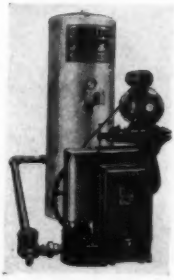
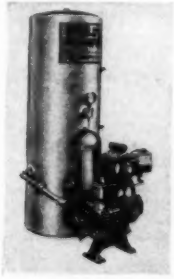
Buy now—buy the best—buy a Goulds CID deep or shallow well Water System and you can rely on always having plenty of water for every possible use with utmost freedom from need of servicing.

See your nearest Goulds Pump dealer or write today for full information.



Goulds CID Water Supply System for deep wells.



Goulds CID Water Supply System for shallow wells.

GOULDS PUMPS, Inc., 340 Fall St., Seneca Falls, N. Y.

GOULDS

8938

laxation of warmth to any one sitting in their glow or in reach of the warm air blown about by their fans.

This is a fire that starts when you plug in the cord, and burns without smoke or odor, without fuel or ashes. It does not have to be watched or tended, and when you are through with it, you just put it out by pulling the plug from the socket.

• • •

Waffles for Hallowe'en

COLD weather spells waffles up our way. Perhaps I'd better say it spells waffles-oftener, for there is never really a closed season on waffles.

Anyway, from now on till spring dust doesn't have a chance to gather on our waffle iron. I just tack up this standard recipe on the inside of a cupboard door, and prowl about hunting for new variations to please the family.

2 cups flour
4 tsps baking powder
½ tsp. salt
1-¾ cup milk
2 eggs
6 tbsps. melted shortening

Mix together the dry ingredients. Add the milk

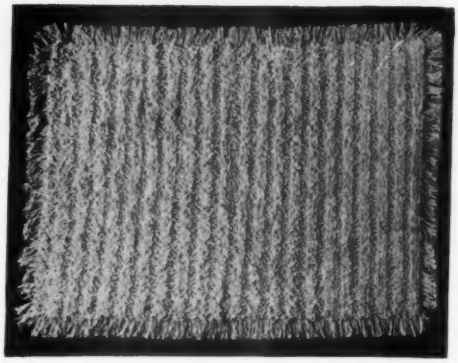
to the egg yolks, and combine with the dry ingredients. Add melted shortening and fold in beaten egg whites.

We've been adding one-half cup of grated cheese to this recipe oftener than usual this summer it seems to me. Then a friend of my husband's came back from Hawaii and taught us to put in half a cup of shredded pineapple when the batter was mixed.

Half a cup of cocoanut goes well, too.

For the days when your waffles make the meal, half a cup of canned corn dumped into the waffle mixture and bake crisp, isn't half bad. Then there are those who add salmon or the chopped remnants of a ham roast, the last of a slice of cold beef, too.

In fact, when you once start gilding the lily and try to dress up a waffle, there isn't much you can't do. Keep your basic recipe right, and let your imagination be your guide. It may not be better, but it will be different.



Singercraft rug made on the sewing machine.

MAKING RUGS
The Modern Way

WOULD you like to make a rug? Now you can do it on the sewing machine! Yes, it is possible, and what's more, it's easy. All you need is a small gadget called the Singercraft Guide, and some twine, wool yarn, old silk stockings or old rags. You can make them short piled, long-haired, or uncut, either plain or gayly patterned.

One of the most recently designed rugs made in this fashion is the modern one shown in the photograph. It is made of ordinary butcher's twine, which can be purchased on cones by the pound, and is very inexpensive. A heavy canvas has been used for the backing. This rug measures thirty-one inches wide and forty-three inches long.

The first step is to draw the outline of the rug in pencil on the canvas, and to allow three inches outside that line to be turned under for the hem,

A rug being made on the sewing machine with the Singercraft Guide.

all the way around the rug. It is now ready for the actual stitching.

The material that you are using, whether it be twine, old rags cut in strips, or wool yarn, is

wound around the Singercraft Guide and stitched to the backing as shown in the illustration. For this particular rug, the narrow extension is attached to the guide to make a deep pile. The design is made by alternating three rows of cut and three rows of uncut twine. Use sharp-pointed scissors for cutting loops. A long fringe is made around the border by using the wide extension on the Singercraft Guide. Then the three-inch hem allowance is turned under on the back of the rug and stitched down by hand with strong thread. The result—a beautiful rug that is as practical as it is easy to make. On an electric sewing machine it can be made very quickly. The Singercraft Guide can be used on any sewing machine.

This is just one of the many kinds of rugs that you can make this way. You can easily see the possibilities—for colors, designs and shapes. You can make small shaggy rugs, rugs patterned with two different piles, monogramed rugs, and even large rugs that are made by stitching together eight or ten sections.

The Singercraft Guide comes with complete instructions. It is very interesting to do; many men make these rugs, too. You can use up all your odds and ends of wool yarn, stockings and rags, and have attractive throw rugs for every room in the house.

• • •

Johnny, Drink Your Spinach!

ONE day last winter, I stood on the eighth floor of Marshall Field's and watched a woman make a cool green cocktail out of a pound of leafy spinach and a little pineapple juice.

Into the liquifying jar on a new kind of electric

October Contest

Some day every one who takes on the job of being a wife and mother is going to be prepared to handle that other job of housekeeping, understood, but not mentioned while they are saying "I do."

Some day girls will realize before they begin that it takes a considerable amount of skill, knowledge, and character to run a house successfully, and they will no more think they can do it without training than they will think they can keep books, run a typewriter, or teach school.

But so far the study of home making as a profession is just beginning here and there in our schools. Most of us learn by doing. Which is a very successful, if somewhat slow and thorny method of progress.

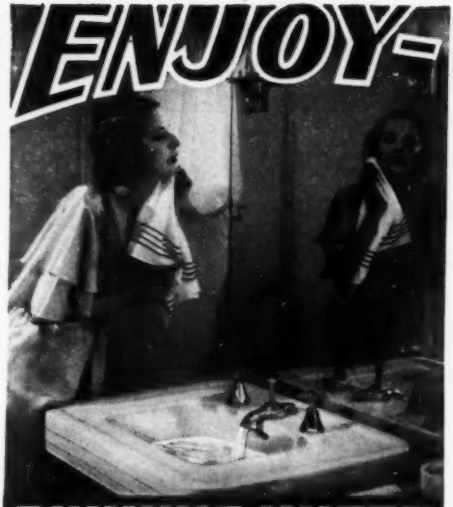
But I'm off the track. What I started to say was that our contest letter this month is to be about things we have learned about housekeeping this past year. I think we will call it "I have learned this easier way of doing a hard job."

We will pay you five dollars if yours is the letter we select as winner. We will pay you one dollar if we use your letter later.

The contest closes October 20.

Send your letters to Gail Meredith, Madison, Wisconsin. General Delivery.

ENJOY—



RUNNING WATER

AT A *Surprisingly* LOW PRICE

CAN you imagine anything more enjoyable than plenty of running water whenever you want it? Think of the **time** and **labor** it **saves** in the barn—it's **convenience** in the kitchen, and it's **comfort** in the bathroom. ● Enjoy running water everywhere with an AERMOTOR WATER SYSTEM.

● And right now every AERMOTOR System is priced **surprisingly low.** Still quality is higher and these units are better than ever. ● Before buying any water system examine an AERMOTOR. You'll see immediately why it offers you most for your money. Take advantage of these attractive prices and save money.

● Get the facts . . .

MAIL COUPON NOW

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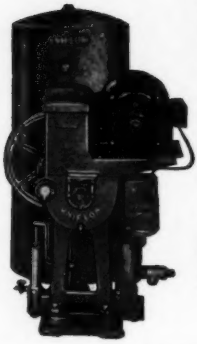
Gentlemen: Please send FREE copy of your "FACTS" Book about AERMOTOR WATER SYSTEMS.

Name_____

Address_____

AERMOTOR CO. 2500 ROOSEVELT ROAD CHICAGO, ILLINOIS



YOU NEVER HEARD A MORE QUIET DEEP WELL SYSTEM

Double Spiral cut gears and pinions running in oil fully enclosed never clash or backlash — easy adjustment of pinion shaft to make these gears run like new always. Bronze Main Bearing. Only one place to oil, easily reached. Differential cylinder gives pumping action on up and down strokes—balances the load equally. Write for complete catalog and full story.

DEEP WELL PUMPS START AT . . .

$84.00

UNIFLOW MFG. COMPANY, ERIE, PA.

SHALLOW AND DEEP WELL PUMPS AND SYSTEMS • WATER SOFTENERS
WATER FILTERS • CELLAR DRAINERS

S-1 SYSTEM WITH 42 GAL. TANK COMPLETE AS ILLUSTRATED $104.00 LIST

mixer, she poured a cup of the juice, followed by a double handful of fresh spinach. After she'd poked the spinach down into the jar, she pushed the switch that started the motor in the base of the mixer, and the cutting blades whipped that spinach into such tiny specks that I could drink it down like water.

It will do the same for any root, green, or leafy vegetable, she told me. It will make orange juice out of whole oranges, peel, pulp, and all; it will make any fruit into a drink.

"All you have to do," she said, "is cut the fruits or vegetables into sections, put them into the jar with a little water or fruit juice, and turn the motor on. In two or three minutes you have a new drink on your hands."

The makers of these machines—there is more than one on the market—point out proudly that with this method you get not only the juice of the food, but everything else in it too. None of the minerals have been lost by cooking, and, if you make up your drink when you need it and use it at once, even the very volatile vitamins are kept captive.

It sounds like a grand way to get the children to liking vegetables, doesn't it? In case you are thinking this may change the looks of our dinner tables completely, and set us to buying glasses instead of plates, don't.

Apparently no one has yet had a chance to do very much research on this matter of drinking your carrots, but Miss Helen Parsons, nutrition expert at the University of Wisconsin, says she thinks that these vegetable cocktails, except where they fit into the special diet of persons who cannot eat cellulose, will be extras in our diet, not taking the place of cooked vegetables, but giving us just that much more valuable food in a way that is easy to take.

And of course it isn't only the vegetables we should think about.

How do you think your folks would like a drink that you make by beating up in this extraordinary mixer a handful of almonds, a banana, a teaspoon of honey, an apple and a little water?

Yes, I think my folks would like it, too.

Anyhow, if you want to see for yourself how it's done, stop in at an electric shop and ask them to show you this new mixer that whips up a drink from a handful of vegetables.

The COVER: Silo Filling Crew

Hard work in the open makes food taste good —and it makes good tasting food disappear, as many a farm wife can testify. When you look at that cover picture, you will have your own thoughts. Mine are: That looks like the real thing. I wish I was there. But I have other thoughts too. If a 5 or 7½ h.p. electric motor was used for silo filling, the crew need not be more than 2 to 4 men, and there would be no big crew to buy for and to cook for, or to wait for when corn is ready. Or if there is a big silo or threshing crew, running water, a refrigerator and electric cooking with its oven meals would help make the cooking task pleasant.

NEW COOL, EASY RUNNING Electric COW CLIPPER

STEWART CLIPMASTER

New anti-friction tension control assures perfect tension between blades for cooler, lighter running—faster, easier clipping. Makes blades stay sharp longer. *Exclusive* Stewart design ball-bearing motor is air cooled and entirely encased in the insulated *EASY-GRIP* handle that is barely two inches in diameter. Completely insulated—no ground wire required. The fastest clipping, coolest running, easiest-to-use clipper for cows, horses, dogs, mules, etc. A $25 value for $19.95 complete. Slightly higher West of Denver. 100-120 volts. Special voltages slightly higher. At your dealer's or send $1.00. Pay balance on arrival. Send for FREE catalog of Stewart electric and hand-power Clipping and Shearing machines. Made and guaranteed by Chicago Flexible Shaft Company, 5524 Roosevelt Road, Chicago, Illinois. 50 *years making Quality products.*

Preferred the world over for its greater speed, ease of handling, rugged, lasting durability.

ELECTRICITY HELPED ME
EARN THIS MONEY

2 H.P. Mill Pays for Itself

During my ten years on a farm, I have used more and more electrical appliances to relieve me of my labor.

One important item is my hammer mill run by a 2 H.P. electric motor. I have used it successfully for four years without repairs. I run it once a week to grind feed and what is more, I make extra money with it by grinding grain for my two neighbors. I have made one-fourth more money than the cost of the mill itself. With this additional money I intend to buy another labor saving electric machine which I need.

Thanks to electric power, "the labor saver and money maker."

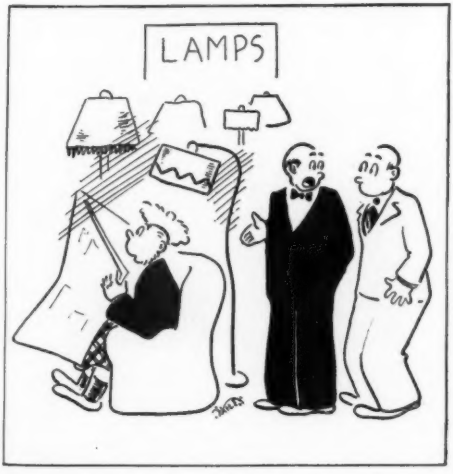
STEPHEN LOPACKI,
Military Rd., R. 18, Lewiston, N. Y.

Hatch Turkey Eggs on Range

Our turkey hen left her nest of ten eggs after she had set nearly four weeks. We kept them at almost an even temperature of 103° for two days and nights in a kettle on top of the deep well cooker on our stove. We hatched out five little turkeys and two of the remaining five were pipped.—Mrs. John Scobie, Peninsula, Ohio.

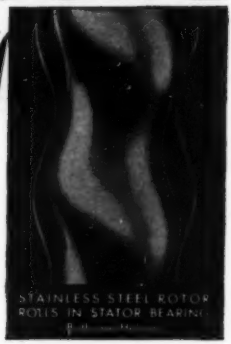
The loss of power due to voltage drop in a poor wiring job can, in a year's time, amount to as much as one month's electric bill on a good wiring job. —"Jack" Haswell, Pa. Exten. Specialist.

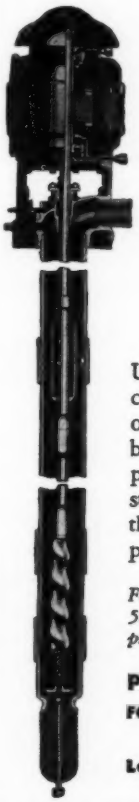
Cottonwood trees have been known to shoot up to 100 feet in height in 15 years.



"Mr. MacTavish comes in every evening to read his paper." Or is he "Minimum Bill."

PEERLESS *announces*
HI-LIFT
– MOST AMAZING PUMP IMPROVEMENT IN 35 YEARS
NEW DESIGN
NEW PRINCIPLE





Utterly Different

NOT a Turbine Pump
NOT a Plunger Pump
NOT an Injector Pump

Unlike any other pump. A hard chrome helical rotor rolls inside of a cutless rubber helical stator bearing at half usual speed. Hypocycloidal motion of rotor with stator spirally squeezes water through pumping element. No priming. No pre-lubrication.

For deep wells, 4" or larger. 300 to 5000 gallons per hour; with high pressure. Write for new Bulletin.

PEERLESS PUMP DIVISION
FOOD MACHINERY CORPORATION
FACTORIES:
Los Angeles, San Jose, Fresno, California; Massillon, Ohio

CHOICE TERRITORY STILL AVAILABLE FOR AGENTS

THE Original INJECTOR PUMP

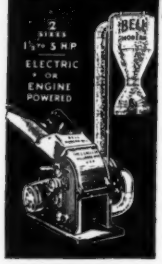
THE leadership of Jacuzzi is reflected today in automatic Deep Well Injector and Shallow Well Pressure System Pumps that produce greater volumes of water with definite savings in power and repair bills.

Jacuzzi Pumps are simple (no working parts in well) . . . quiet . . . safe . . . and built of highest quality materials according to precise engineering standards.

Write for name of nearest dealer in Jacuzzi Pumps and Water Systems. Ask for illustrated, descriptive folder and terms of easy payment plans.

JACUZZI BROS., INC.
Berkeley California

CUT FEEDING COST UP TO 40 PER CENT



and Increase Milk production as much as 15% or more by feeding home-grown GROUND feed to your Stock. If you feed Hogs, Cattle, Sheep or Poultry, you need a BELL "Modern" Mill to get the most profit out of farming. Grinds wheat and shelled corn for as little as 6 cents a Ton. Grinds all kinds of Grain and Roughage. Capacity up to a ton an hour. Sold on 60 DAYS APPROVAL—EASY TERMS. Send for valuable free Book on Stock Feeding and low factory prices on Hammer-Mills, Corn Shellers and Feed Mixers.

C. S. BELL CO., Established 81 Years
Dept. 71 • Hillsboro, Ohio

TRUMBULL Automatic WATER WARMER

Pays You 3 for 1

Provide Your Hens with Water at 50° and Average an EXTRA Dozen Eggs per Bird This Winter. . . .

More Money - Less Work!

Speeds Up Laying like a Spring Thaw! More Eggs When Prices Are High Pay High Dividends on This Small Investment. Built for Durability and Long Service. Unfailing Water Supply in All Weathers Keeps Hens in Prime Condition and Production.

At Your Dealer's—or Send $3.00. Shipped Prepaid. Folder Free.

THE TRUMBULL ELECTRIC MFG. CO.
1012 Woodford Avenue Plainville, Conn.
A GENERAL ELECTRIC ORGANIZATION

ON THE AIR

Conducted by JEROME J. HENRY

New Radio Gadget

A ONE man sound effects cabinet has been specially built for the new Uncle Jonathan show on CBS, containing every sound effect needed on the program. It includes buzzers, chimes, telephones, two bicycle bells, a telegraph sounder, an oscillator, and four automobile horns. These last are of ancient vintage, so ancient that they had to be imported for the program.

• • •

Newspaper of the Air Entertains

"THE BOTTSVILLE BLADE," mythical newspaper of the air, printed on cellophane, is unreal to everyone except its producer, Orth Bell, who plays Uncle Jonathan on the program over CBS stations. Orth claims it is based on a real newspaper he worked on as a kid of 13, and the kind of things he used to do to its editorial policy.

The paper is still in existence, so Orth won't tell its name. But in his youth, it was a typical country sheet, housed in a store, with wood partitions, creaky stairs, and old roll top desks. Its staff wore green eye shades, and black muslin sleeve protectors. The paper came out once each week.

Orth was the printer's devil, office boy and general helper. His pet pride was to ball up news items. Just before the front page went to press, he would change the headlines on a couple of the leading stories. For instance one time a local minister died

Orth Bell in the role of owner, editor, and publisher of the Bottsville Bugle.

and a notorious bootlegging joint was raided. Orth mixed the headlines so they read: "Bootlegging Joint Dead," and "Local Minister Raided."

He had another little habit of inserting political

news and patent medicine advertisements in among the obituary column. This occasionally produced some remarkable results—such as the time he inserted statistics on the losing political party two days before election under the head: "Death's Harvest."

Strangely enough his editors got many a laugh out of his juxtapositions. Later Orth became a reporter and sold resort advertising. Since then he's become a radio actor, but he's never forgotten the past. His "Bottsville Blade" preserves the memory of the crazy-quilt he made of his home town news.

• • •

New Farm Series

THE American farmer who, with his family, represents 30,000,000 people, has his activities, his problems, his home life, and his opinions reported by Columbia's Country Journal, new series of weekly programs over the CBS network on Sundays.

Nine-year-old George Sherman got so interested in radio sound effects that he fixed up a lot of gadgets in his room. Here he is at work imitating noises.

Charley Stookey, a former Illinois farmer, who has been associated with farm broadcasting for many years, is the Journal reporter. Each week he visits a different important farming section of the country.

The broadcasts are a combination of reporting, interviews, and special events, with CBS frequently setting up its microphones at agricultural fairs and expositions. Stookey interviews farmers, their wives and children, questioning them about crops, ideas on legislation, latest scientific aids to farming, and other matters of everyday interest.

Prize winners at fairs are also brought to the microphones to tell how they won their blue ribbons. This is especially interesting in the fall and early winter season when the fairs are in full swing.

MARVELOUS NEW IRONER PERFORMS LIKE MAGIC!

Biggest Ironings Beautifully Finished in Half the Time

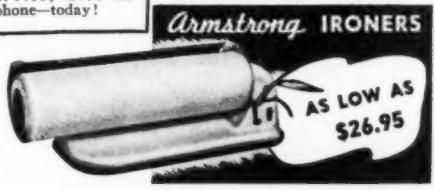
You can literally *race* through big ironings with this remarkable new patented Armstrong Ironer. No tiresome standing up over a hot ironing board—no lifting or pushing a heavy iron. You simply guide things through this fully automatic ironer and out they come with all the sparkling freshness of a professional job. On ironing day you merely *boss* the job—the ironer does the work.

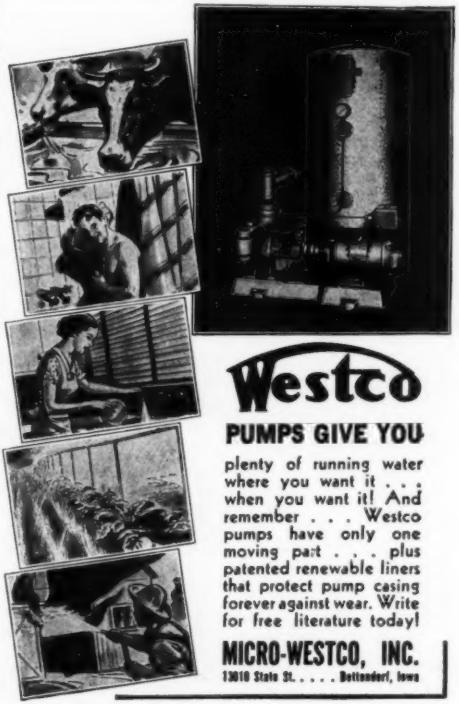
DEALERS: Thousands of these ironers already sold. Complete, liberal sales plan includes mechanical self-demonstrator, free with initial order. Write, wire or phone—today!

Send for FREE Booklet

Find out now about this sensational appliance. Write today for interesting booklet by noted home economist. Address ARMSTRONG PRODUCTS CORPORATION, 34 W. 7th Ave., Huntington, W. Va.

Armstrong IRONERS





Westco

PUMPS GIVE YOU

plenty of running water where you want it . . . when you want it! And remember . . . Westco pumps have only one moving part . . . plus patented renewable liners that protect pump casing forever against wear. Write for free literature today!

MICRO-WESTCO, INC.

13010 State St. . . . . Bettendorf, Iowa

Heater for Poultry Waxer

Question: *I am thinking of trying to heat 20 quarts of water to 130° F. How can I do this with electricity? The purpose of this is to heat wax for the wax method of plucking chickens. The water will be in an open pan with the wax placed in a smaller pan inside the larger one.*

L. W. M., Pa.

Answer: You would need a 2 kilowatt or a 3 kilowatt immersion type heaters in your water tank, depending on how well it was insulated and how many birds per hour you expected to dip. These heaters may be purchased from the General Electric Company, Westinghouse Company, or the Edwin L. Wiegand Co. of Pittsburgh.

To do the waxing job right, you need rather close control of temperatures and should use a thermostat to control your heating element.

Electric scalders and waxers are made for sale by the Apothecaries Hall Company, Waterbury, Conn.

Milk Cooler, Jet Pump and Water Heater

Question: *We are going to enlarge our milk house and put in modern equipment. Will you send me information on a 4 ft by 6 ft. milk cooler? What kind of running water system would you recommend? Our well is 187 ft. deep and half way between house and milk house. Is it possible to put an electric water heater in the basement and pipe to the milkhouse 40 ft. away?*

Mrs. C. K., Mich.

Answer: We are having several companies send you literature on milk coolers. Coolers having some means for agitating the water will cool the milk in from 1 to 1½ hours, whereas without an agitator it may take from 1½ to 2½ hours. The agitator adds somewhat to the cost. It is desirable where it is necessary to cool the morning's milk quickly for delivery.

If the water in your well comes up to within say 80 ft. of the surface, you might use one of the new jet pumps which would permit you to put the pump and pressure tank in your basement. Otherwise, any of the deep well systems manufactured by a well-known company would be satisfactory. It would be best to purchase from a local dealer who could give you service when it was necessary.

It would be possible for you to install a regulation 30 or 40 gal. electric water heater in your basement and pipe the hot water to the dairy. There is serious doubt as to whether this would be desirable. 40 ft. of 3-4 in. pipe would hold about 1 gal. of water. Each time you wished to use hot water in the milk house, it would be necessary to drain out this cold water and warm up the pipe before the water would run hot. This might use three or four gallons. If you were drawing water only once or twice each day at the milk house, it might still be economical for you to waste this amount of water to avoid the possibility of freezing during the winter. It is my opinion, however, that it would be cheaper and more satisfactory for you to install the water heater in the milk house as close to the point of use as possible.

Electricity vs. Coal for Cooking

Question: *What is the equivalent price for current per kw.-hr. for cooking ranges to* $6.50 *per ton for coal?*

F. M. R., Ohio

Answer: You have asked me a hard one. There is a great deal of difference in electric ranges in size and construction and still more difference in women in the way they do their cooking on the electric range. Perhaps the best I can tell you is

BUYERS' INFORMATION SERVICE

As a reader of ELECTRICITY ON THE FARM you are entitled to our buyers' information service free of cost. When looking for information about equipment or material that you plan to buy, first read carefully the advertisements in this issue. They are your best guide. Then, if you do not find what you want, just use the coupon below to tell us what you need and we will see that you get the information you want.

USE THIS READER SERVICE COUPON

The more clearly you specify what you want, the more exactly we can meet your requirements.

ELECTRICITY ON THE FARM
Readers' Service Dept., 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying:

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My name is .....

Address .....

I get electricity from .....

.....

Check here ☐ if dealer. 10-39

INSIST ON FLAIL-ACTION
GIVES YOU 2 WAY GRINDING
AMAZING CAPACITY

Send for FREE catalog on most sensational hammer mill of all. Hammers beat DOWN—grinds all grains—roughage—faster, easier, at lower cost—amazing capacity.

A Size for Every Motor

STOVER *FLAIL-ACTION* FEED MASTER

—will grind your feed as you want it. Gives you 2 way grinding. Also acts as grain elevator. Leads all others—yet costs no more. Ask your Oliver dealer for demonstration. Easy terms. Send for Free Catalog today.

Stover Mfg. & Engine Co. 75 Lee St. FREEPORT, ILL.

that in the average home it takes about 1 kilowatt hour per person per day to cook with an electric range. If you know how much it costs for coal per month and the number of persons in your family, you can figure out a reasonably close comparison in cost with electricity.

Not all the advantages of electric cooking are in price, however. One gets automatic temperature control with less food spoilage; the kitchen does not warm up so much in hot weather; you avoid cutting and carrying fuel and ashes; and the range, as well as the kitchen, is much easier to care for.

Second Letter: *Why not run a little comment from the users—a little honest-to-goodness or bad comment? Maybe you're afraid of that kind of letters.* F. M. R.

Second Answer: No, Mr. R., we are never afraid of the truth, but we have not felt that "honest-to-goodness" comment must necessarily be bad comment. If anyone who has used both coal and electric ranges has anything to say which would help our readers to live happier or more prosperously, let's have it.

Wire Sizes for Poultry Farm

Question: *I serve two farms from one meter. It is 600 ft. from the transformer to my meter with 3-No. 2 wires. 200 ft. further is my house; 200 ft. further my poultry house, and 90 ft. further to the first of three brooder houses. I wish to use 3 electric brooders in the brooder houses, 2 in the laying house; also an electric pump, 5 water warmers, 6, 60-watt lamps and a 400-watt incubator. At the residence I have a 1,000-watt iron, ¼ h.p. pump, radio and lights. If the power company moved the transformer to my end of the 600 ft. line, could I use smaller lead-in wires? What size wires do I need between meter and residence? residence and poultry house.* G. R., N. Y.

Answer: With a connected load of approximately 8 kilowatts, the voltage drop on 600 ft. of line made up of three No. 2 wires would be about 7 volts.

Even though you have 230 volts at your meter, your No. 6 wires would be entirely too small for the load you expect to have in your poultry plant and residence. Since all of the equipment might conceivably be on at the same time, the wires should be capable of carrying the entire load. Allowing for a 2 per cent drop in voltage or about 4½ volts to your poultry house, you would need three No. 2 wires from your meter to the house and three No. 3 wires from the house to the poultry plant. I would recommend three No. 2 wires for the full distance. The No. 6 wires are larger than necessary to run to the brooder houses, but would give very satisfactory service there.

Paul Bunyan Lumber Pile

If all the lumber cut in the United States for about the last 135 years were in a single solid pile it would make a cube almost exactly 1 mile in each dimension according to a recent calculation by the Federal Forest Service. The pile would be more than four times the height of the Empire State Building (1,248 feet). As much lumber has been cut in the last 35 years, according to Forest Service estimates, as in the preceding 100 years.

Automatic Capacity Control with a
Dayton DeLuxe Pump

THE DAYTON PUMP & MFG. CO.
DAYTON, OHIO

THE QUICK, LOW-COST WAY TO HEAT WATER—
ELECTROMASTER'S *AUTOMATIC*
ELECTRO-PAIL

14-Qt. Capacity
10-Ft. Cord

This inexpensive portable water heater is exactly what *farm families need.* No fire hazard—it automatically will turn itself off. Ask your electric power company to demonstrate ELECTRO-PAIL, or write to

ELECTROMASTER, INC.
1803 E. ATWATER • DETROIT, MICH.

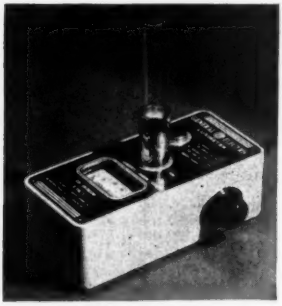
COOK ELECTRICALLY
WITH A
Monarch
COMBINATION
RANGE

A size and model for every home. See your Monarch retail outlet or write for particulars.
MALLEABLE IRON RANGE CO.
1239 LAKE STREET BEAVER DAM, WIS.

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Luximeter for Testing Pasteurized Milk

Developed in collaboration with the N. Y. State Department of Public Health, this LUXIMETER determines the degree of pasteurization of milk by the phosphatase method. The milk containing a blue solution is placed in a test tube in the instrument, and the amount of light which passes through indicates the degree of pasteurization. It may also be used for determining the turbidity of water supplies and for other purposes.



Low Cost Circuit Breakers

Circuit breakers combine the functions of fuse, switch and motor protection device. They are desirable for many applications on the farm such as entrance switches for farm buildings, control of circuits for small water heaters, hotplates, sterilizers, and motors. This new line beginning at a cost of $2 is made in capacities of 15, 20 and 25 amperes for 115-230 volt service, in single and double pole types for surface or flush mounting.

New Publication

"A PORTABLE MOTOR FOR TENNESSEE FARMS," Publication 222, University of Tennessee, Agricultural Extension Service, Knoxville, Tennessee, April, 1939.

Dairy Water Heater

This is a new 10 gal. electric water heater designed especially for use in the dairy. It is not connected to the plumbing, but hot water is forced out when cold water is poured into the top. Heavy galv. tank; 2¼ in. rock wool insulation; thermostat adjustable from 130° to 185°; low temperature heating element which straps to the outside of the tank to prevent forming scale in hard water, any wattage desired from 250 to 1,500; non-dripping siphon outlet.

New Compact Portable Radio Battery

This "layer-built" "B" battery weighs only two pounds. It is designed especially for use in the new portable radios and is claimed to have a service life equal to that of the average battery of twice its size.

Fried Chicken All the Year

(*Here from page* 15)

covered with sand and the chicks run about here until they are old enough to be turned out in a wired run outside. An opening cut near the floor provides access to the run where they are turned out on sunny days.

The equipment cost us practically nothing. Expense of lighting and heating is very little. The bulb maintains uniform warmth without constant attention, and the entire arrangement is quite satisfactory if you only want fried chicken for the home table.

CLASSIFIED ADVERTISING

NEW ELECTRICAL DEVELOPMENTS. Lyon again leads in developing electrical helps and safeguards for your poultry. Investigate the outstanding new Lyon Water Heaters. Constant temperature regardless of weather. Also positive time switches burglar alarms and the new, improved brooders. Write for free catalog of Lyon's proven line. LYON ELECTRIC COMPANY, Dept. EF, San Diego, California.

GET YOUR FREE COPY NOW. Bussey 80-page book for Poultrymen. Low Factory Prices. Parts for electric brooders and batteries; heating assemblies; wire Fabrics; Poultry Equipment. Save money. BUSSEY PEN PRODUCTS CO., 5151 West 65th St., Chicago.

POULTRY TIME SWITCHES pay for themselves in increased egg production. Five models from $3.95 to $18. All-electric or manually wound. With or without dimmer circuit. Write for information. AUTOMATIC ELECTRIC MANUFACTURING CO., Mankato, Minnesota.